



Stroke Care Now Network

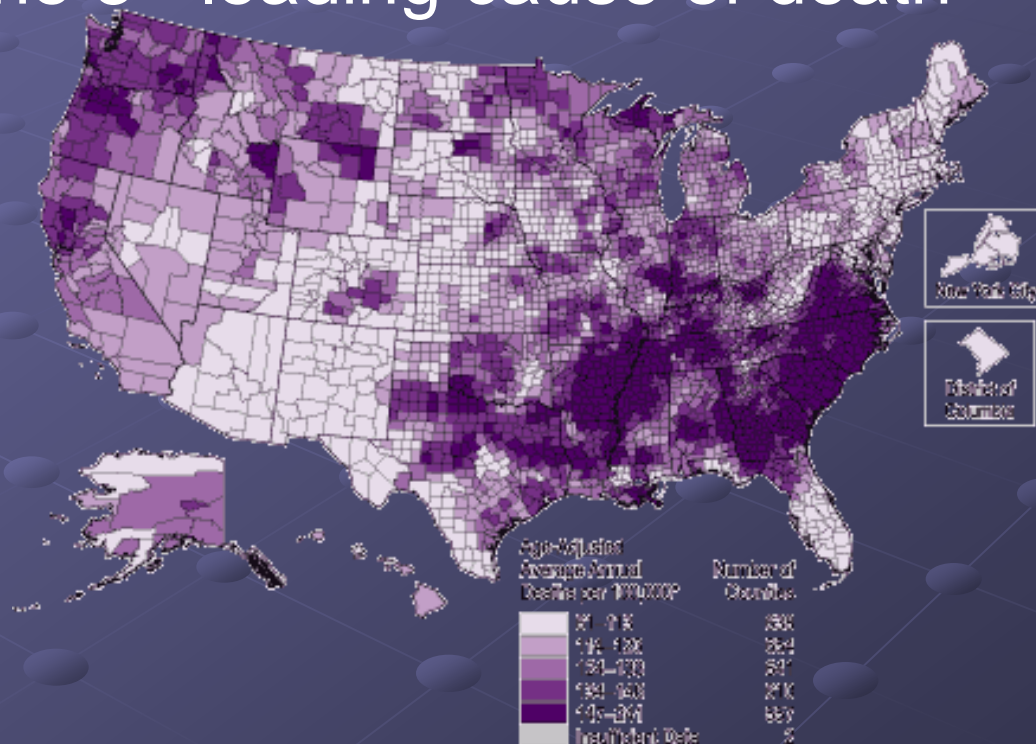
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Administrator Parkview Hospital

Presentation Overview

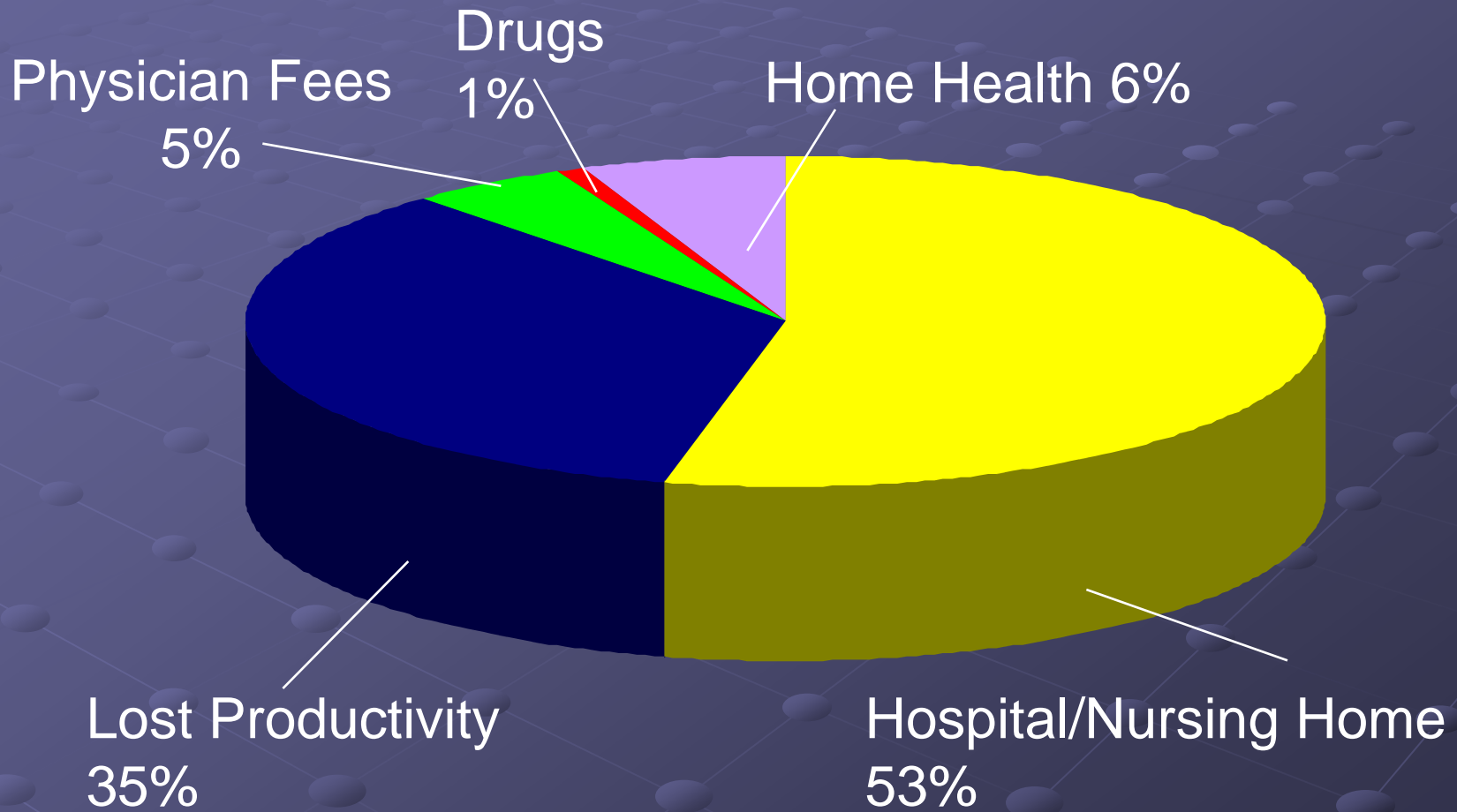
- Stroke Statistics/Background
- Reasons for Action/Challenges
- Telemedicine Program
- Website Overview
- Education
- Protocols/Standardization
- Learning/Opportunities
- Outcomes

Stroke: Background

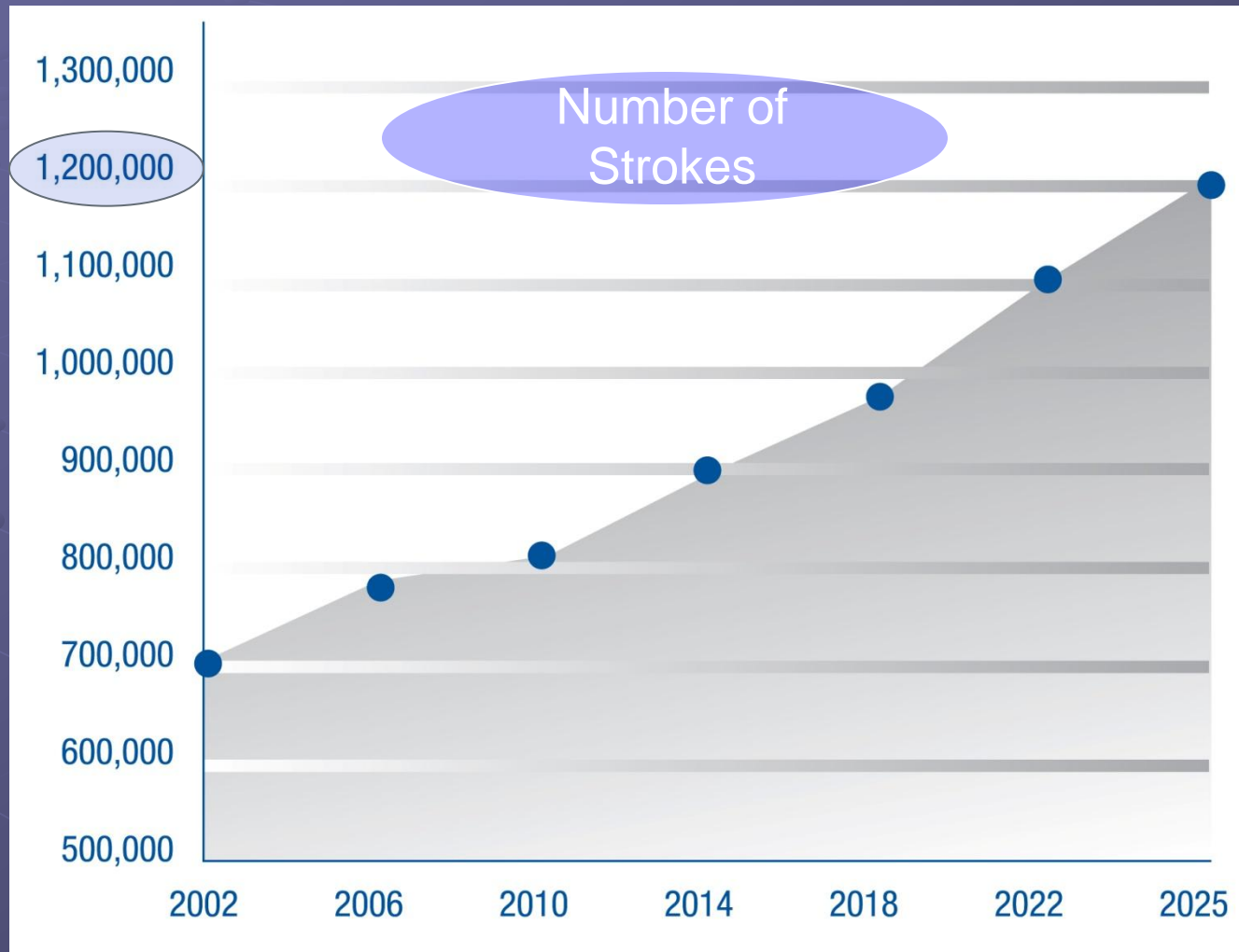
- 750,000 pts experience a new or recurrent stroke in the United States annually.
- Stroke is the leading cause of major disability and the 3rd leading cause of death



Stroke Costs: \$65 Billion/Yr



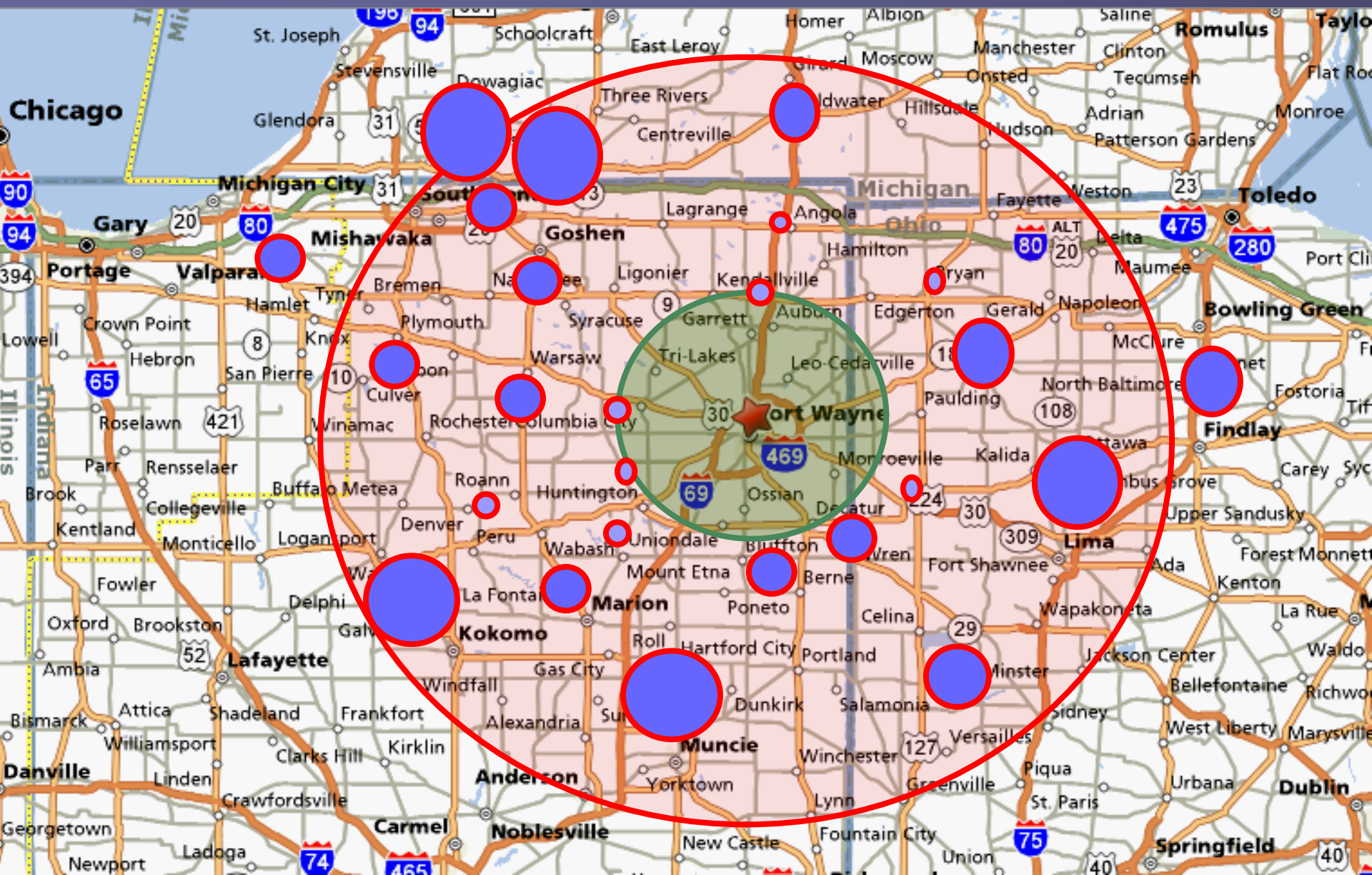
Projected number of strokes in US: 2002 - 2025



Source: Stroke, January 2004; J. P. Broderick, MD

Where Stroke “lives”

North East Indiana/North West Ohio/Southern Michigan



Challenges of Stroke Care

- Availability of Physicians who specialize in the treatment of stroke:
 - Neurologists
 - Neuro-Interventionalist
 - Interventional radiologists

Challenges of Stroke Care

● Complexity of Stroke Care

- Coordination of EMS/Air Rescue, EDs, ICUs, acute care and rehabilitation
- Use of standardized guidelines & protocols must occur at each level of care
- Use of Multi-disciplinary teams to provide care

Challenges of Stroke Care

- Public Knowledge/Education of Stroke
 - Risk factors that cause stroke
 - Primary prevention of stroke
 - Signs of stroke
 - FAST
 - Getting to a hospital that can treat stroke immediately!
 - “Time Lost is Brain Lost!”

Total Number of Hospitals in
Indiana

114

How many of those hospitals
are certified Primary Stroke
Centers?

Primary Stroke Centers in Indiana

- Bloomington Hospital, Bloomington
- Bluffton Regional Medical Center, Bluffton
- Columbus Regional Hospital, Columbus
- Community Hospital East, Indianapolis
- Community Hospital, Munster
- Deaconess Hospital, Evansville
- Deaconess Gateway Hospital, Newburg
- La Porte Regional Health, La Porte
- Lutheran Hospital of Indiana, Fort Wayne
- Methodist Hospital, Indianapolis
- Parkview Hospital, Fort Wayne
- Saint Joseph Hospital, Kokomo
- Saint Joseph Regional Medical Center, South Bend
- St. Vincent Hospitals and Health Services, Indianapolis

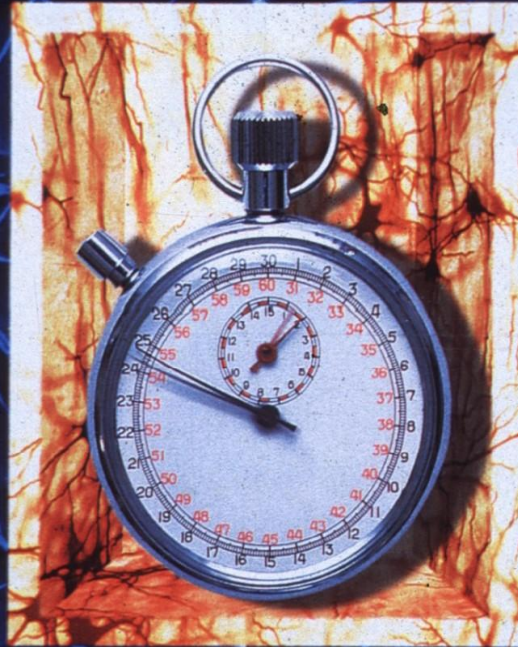
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Why develop a Stroke Telemedicine Program?

- To provide physician support in the outlying communities
 - To help the ED MDs make those tough decisions that are not easily made over the phone
- To standardize the processes and protocols that comprise stroke care
- To increase public education and awareness in the community
- To provide “Primary Stroke Center” Care to all hospitals & patients



“Time is Brain”

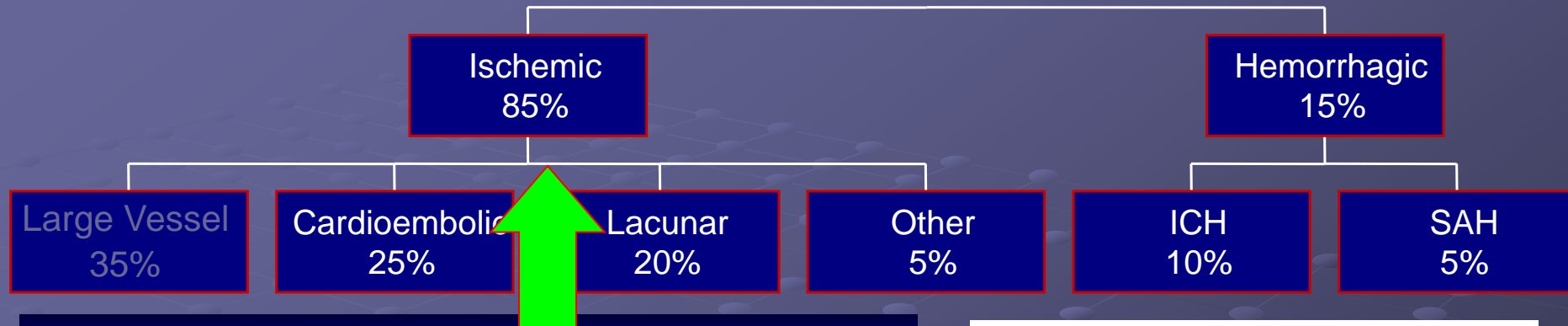


Review NINDS IV tPA Trial

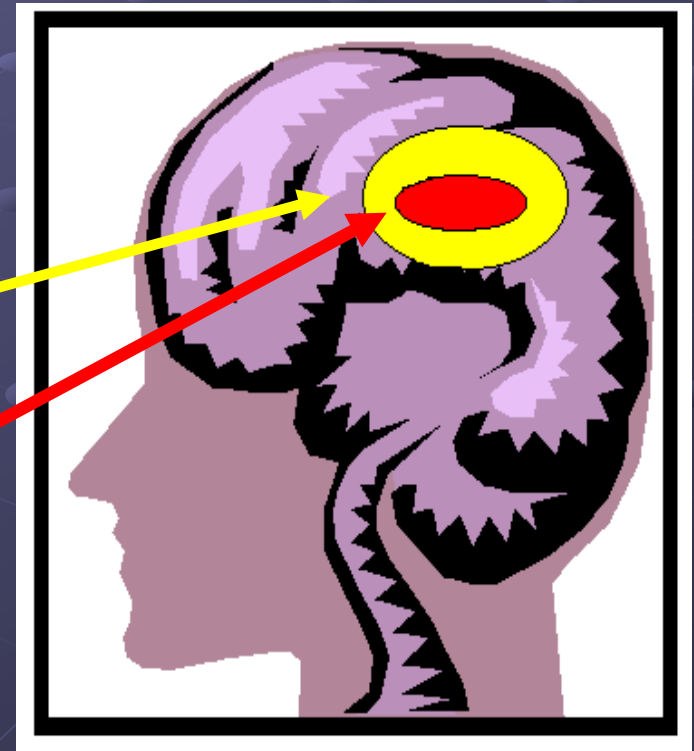
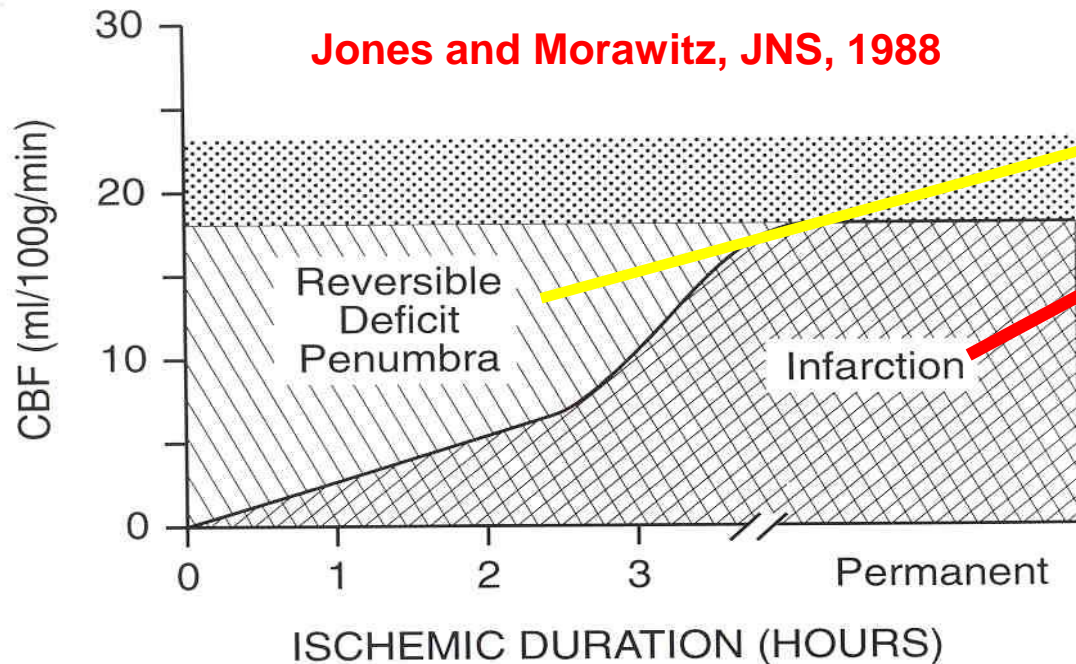
- Onset to treatment within 3 hours
 - Average NIH Stroke Score was 14
 - Good outcome (mRS 0-1): 39% vs. 26%
 - Median NIHSS @ 24 hrs: 8 vs. 12
 - Symptomatic ICH 6.4 % vs. 0.6%
-

- Overall, for every 100 patients treated within the first 3 hours, 32 had a better outcome as a result and 3 a worse outcome.
- Brain hemorrhages related to tPA caused severe worsened final outcome in 1% of patients.
- The “number needed to treat” (NNT) to have a “near normal” outcome is 8; NNT to have an improved outcome is 3.1

Ischemic Stroke is Progressive!



Cerebral Ischemia: CBF < 18ml/100g/min



Mission:

- to advance public awareness about stroke, its risk factors and signs and on how to access the network hospitals
- to provide telemedicine neurological consultations in regional hospitals that do not have neurological expertise and assist in triage, review of CT and initial local management before treatment or transfer.
- to improve use of intravenous thrombolysis in local regional hospitals and reduce time to treatment
- to improve access of patients to intra-arterial thrombolysis / thrombectomy up to 8 hours or more after onset of symptoms.
- to promote the research and understanding of physiologic brain imaging with CT perfusion and CT angiography in triage for interventional therapy - beyond the conventional time window of 3 hours.



What is the Network:

The StrokeCareNow Network is the first network of its kind in Indiana. Using telemedicine, the SCNN makes the expertise of the physician of the Fort Wayne Neurology Center "virtually" available to all stroke patients in "real time" who are cared for in participating network hospitals in the TriState region of North Eastern Indiana, North West Ohio and Southern Michigan.



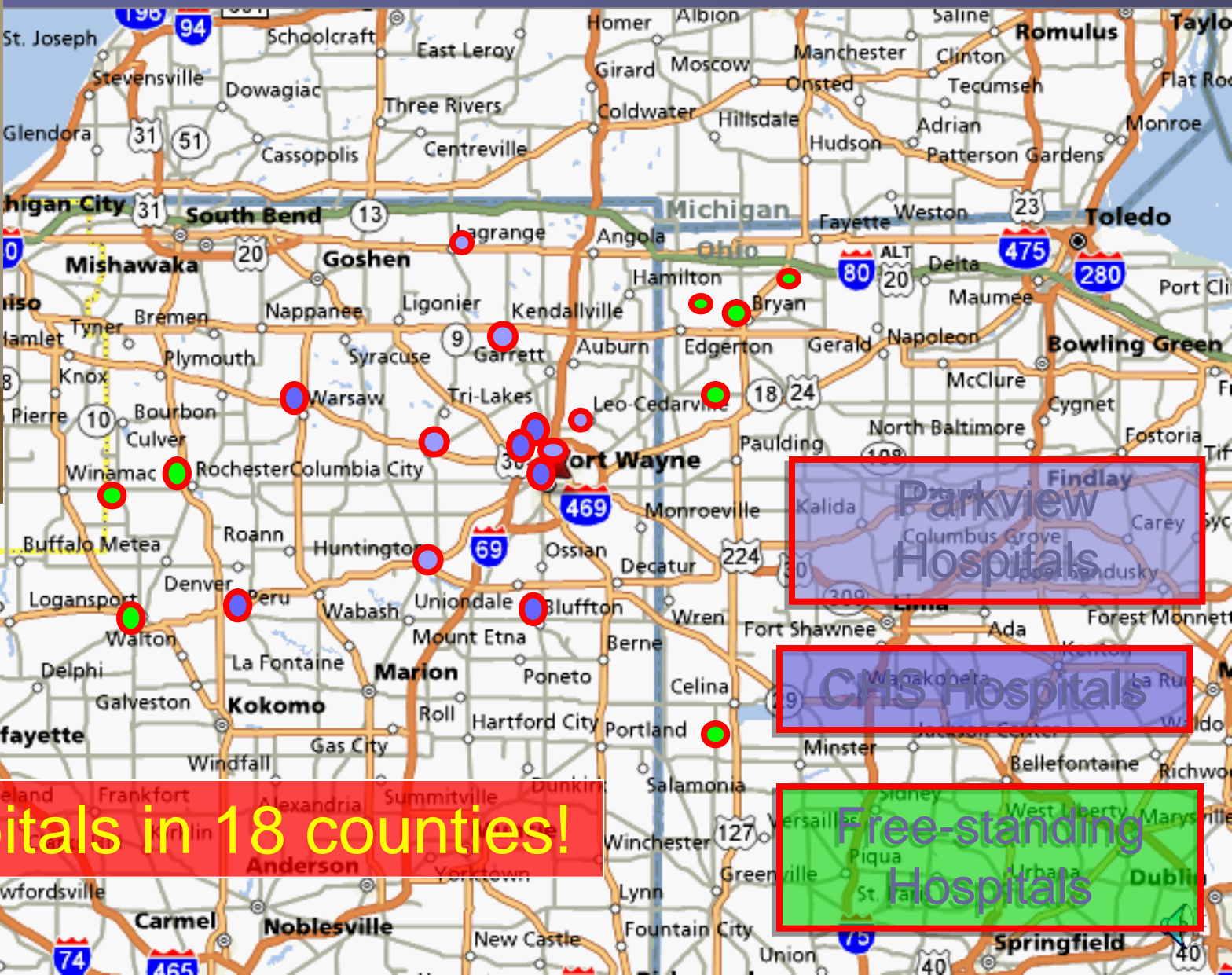
Stroke Care Now Network Phase I "Parkview 2007"



Stroke Care Now Network Phase II “Today”



ReSet
Robot

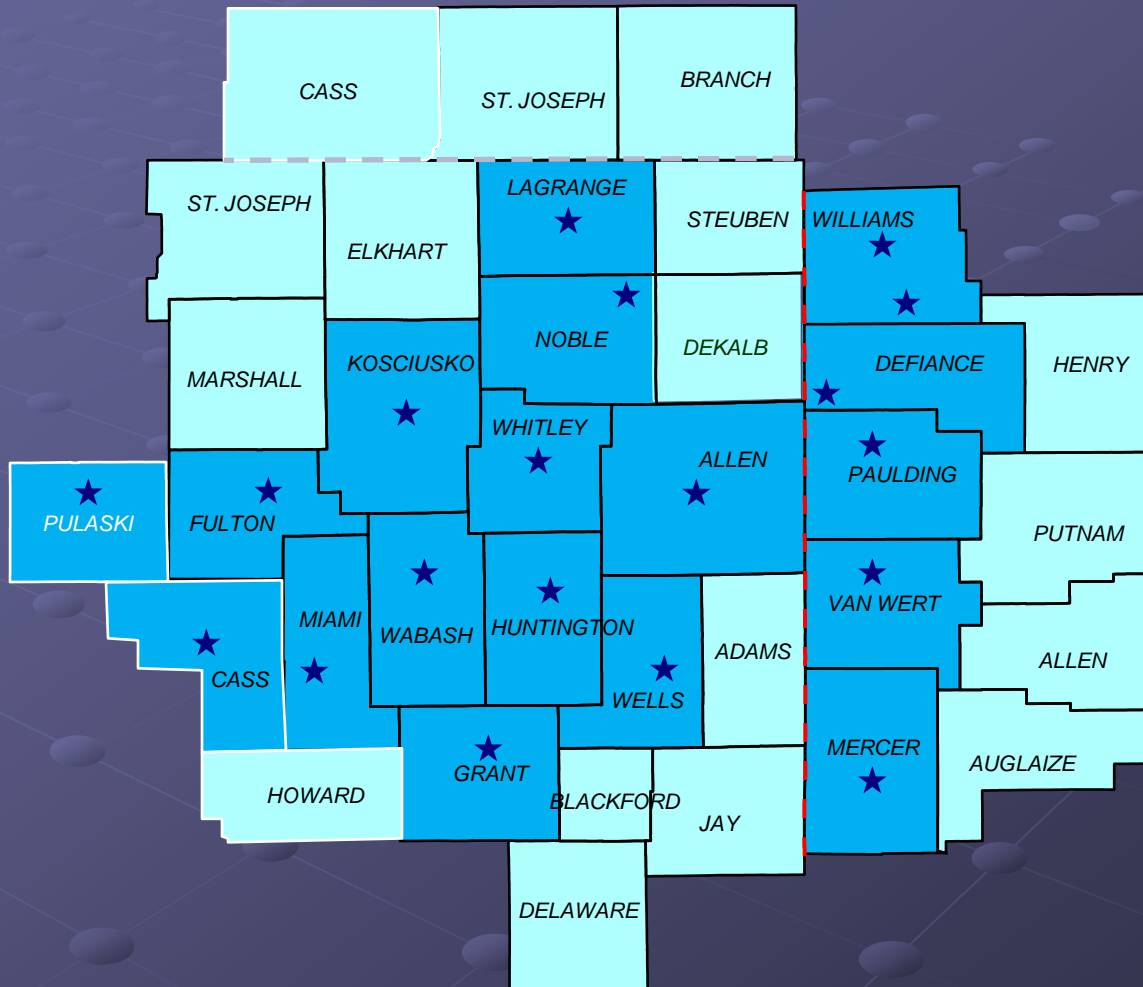


22 Hospitals in 18 counties!

Parkview
Hospitals

CHS Hospitals

Free-standing
Hospitals



How did we get there?

- The Stroke Network was formed May 2008 between 2 hospitals and the independent Neurological group
 - How did we move from 5 hospitals utilizing telemedicine to 22 hospitals over the course of 2 years?
 - One on One meetings with local hospitals – promote the ability to provide state of the art care 2 hours from Ft. Wayne
 - Demonstrate outcomes seen across the nation from telestroke and opportunities we see within our own community

How did we get there?

- Passion of the Neurologists, NeuroInterventionalist and stroke teams to raise the level of care in our communities and to make a difference
- Make the device affordable for the local hospital

Stroke Care Now TeleStroke

The “ReSet”



- Cooperation between Parkview and Fort Wayne Neurological Center (FWNC) to develop an alternative to expensive commercial systems

← Nurse propelled

Self-propelled →

- FWNC provides Stroke Expertise to patients outside of traditional reach via Telemedicine

InTouch RP-7



Stroke Care Now Website

- www.strokecarenow.com
 - Useful information including
 - Links to:
 - NIH Training
 - Standardized Order Sets – emergent & admission
 - Contains all elements for best practices/core measures for stroke
 - Patient/Family Education
 - Activase dosing guidelines
 - Link to telemedicine units for Physicians

Education

- Comprehensive program developed for community education
 - Marketing portfolio of Billboards, mailings, radio and television commercials
 - Developed many tools to share at community events – focusing on FAST acronym as the standardized message
 - If the patient does not get to the ED within a small window of time – the technology we have to treat is not going to help

Elements of Acute Stroke Care: EMS

- Identification of stroke symptoms
 - EMS training at all community hospitals and local EMS providers
- Expedited Transport (Load and Go)
- Pre arrival notification of symptoms to ED
 - All with the goal of decreasing that door to needle time and reach our target goal of <60 minutes



Elements of Acute Stroke Care: Physician

- Preparation of ED system activate
- Patient assessment
- Initiate Stroke orders
- Decision for Activase (tPA)
- Decision to transport for interventional or critical care (Ship or Drip and Ship)



Elements of Stroke Care: Nursing

- Patient assessment
- Call to the Stroke Care Now Network
- Robot to the bedside
- NIH Stroke Scale
- Insertion of 20 g angiocath in the antecubital
- Draw labs
- EKG
- CT scan without contrast – goal <20 minutes from arrival
- Blood pressure control – use of Labatelol (Normodyne) and/or Cardene (Nicardipine)



Standardized Communication

- Dedicated “800” line developed
- Ensures communication is direct
- Call goes to 2nd (dedicated) oncall physician for telemedicine consultation
- Dedicated computers located in MD offices, hospitals and MD homes that are dedicated to the Stroke Network
 - Makes for easier connectivity



Communication

Standardized Radiology Process

- Developed to ensure that tests being done in community are utilizing resources appropriately



Stroke Radiology
Flow

Standardized Data Collection

- An important goal of the network is to improve the delivery of care in all hospitals
 - This includes door to CT times, door to activase times



Quality Aggregate
Data Collection



Data Collection

Learning Points

● Continual System Testing

■ Connectivity of telemedicine unit

- Each Internet system in each hospital is not the same and the device must be built to meet the internal specifications for each hospital
- We “ping” each device at least daily and have 3rd party IT company help manage the 22 sites

■ CT Image Transfers

- Ensure universal workflow is there – utilization within network is the PACS system for timely image transfer to the MD for decisions and next steps

Learning Points

● Continual Education Program

■ Staff

- Mock stroke activates monthly at community hospitals
- We visit each hospital at least twice/year for onsite education
- We utilize the telemedicine device for unit meetings and discussions with Neurologists from Hub Hospitals

■ Patients

- Teaching the symptoms of stroke and ways to prevent a re-occurrence

Learning Points

● Continual Education Program

■ Community

- Recognizing the signs and symptoms of strokes – using FAST as educational basis
- Get to the hospital immediately!!!
 - Time is Brain

● Standardization is a must – all hospitals, all physicians, all staff members – all of the time

Outcomes

- Higher tPA utilization in the community hospitals
- Patients have not been transferred to Hub Hospitals after tele-consultation:
 - Due to severity of stroke
 - Hub hospital is not able to treat due to being very severe and comfort care is the best for this patient
 - Or being too mild and follow-up can be done within the community hospital
 - Was not truly a stroke – Conversion disorder
- Saves on cost of transportation, allows patient/family to remain in community

Outcomes

				SCNN 2011 1st Quarter Data							
	2008 Strokes/ tPA	2009 Strokes/ IV tPA	2010 Strokes/ IV tPA	Total # Strokes	Calls to SCNN	Total # IV tPA	Total # Neuroint er-vention	SCNN Retained at Spoke	SCNN sTransf er to LH	SCNN Activate sTransf er to PVH	SCNN Activate s Back to Spoke for Rehab
Hospital											
	50/1	41/1	58/2	15	0	0	0	N/A	N/A	N/A	N/A
	38/0	32/2	33/1	4	4	1	0	2	0	2	0
	29/0	28/2	39/2	8	0	2 not thru SCNN	0	N/A	N/A	N/A	N/A
	29/0	41/0	32/1	11	0	0	0	N/A	N/A	N/A	N/A
	17/0	18/2	1-Nov	4	1	0	0	0	1	0	1
	81/3	85/3	95/7	24	2	1	0	0	2	0	0
	124/5	104/4	104/11	24	12	2	0	2	4	3	1
					Not yet live	?	0	N/A	N/A	N/A	N/A
	63/1	54/1	39/5	10	0	0	0	N/A	N/A	N/A	N/A
	40/0	23/1	34/3	14	6	0	0	2	2	2	N/A
	26/1	24/0	19/2	5	1	0	0	0	1	0	0
	43/2	20/1	34/2	8	3	1	0	0	2	1	0
	In PV Hub data	In PV Hub Data	In PV Hub Data	N/A	3	0	0	0	0	3	N/A
	42/3	24/0	35/1	10	0	0	0	N/A	N/A	N/A	N/A
					0	?	0	N/A	N/A	N/A	N/A
	18/1	19/0	17/1	2	0	0	0	N/A	N/A	N/A	N/A
	55/1	45/2	48/4	11	3	1	0	1	2	0	0
	43/2	50/3	53/1	12	Not yet live	0	N/A	N/A	N/A	N/A	N/A
	16/3	7/1	?/1		2	?	0	0	0	2	0
						Total # IV tPA					
	714/23=3.2%	615/23=3.7%	653/44=6.7%	158/8=4.9%	Total SCNN Calls: 37	Total # IV tPA thru SCNN: 6	Neurointer- vention: 0	Retained at Spoke: 10	Transfer- red to LH: 14	Transfer- ed to PV: 13	Back to Spoke for Rehab: 2

- 2008 – tPA rate was 3.2%
- 2009 tPA rate was 3.7%
- 2010 – tPA rate was 6.7%
- 2011
 - 1st Q 16.7%
 - 2nd Q 23.6%